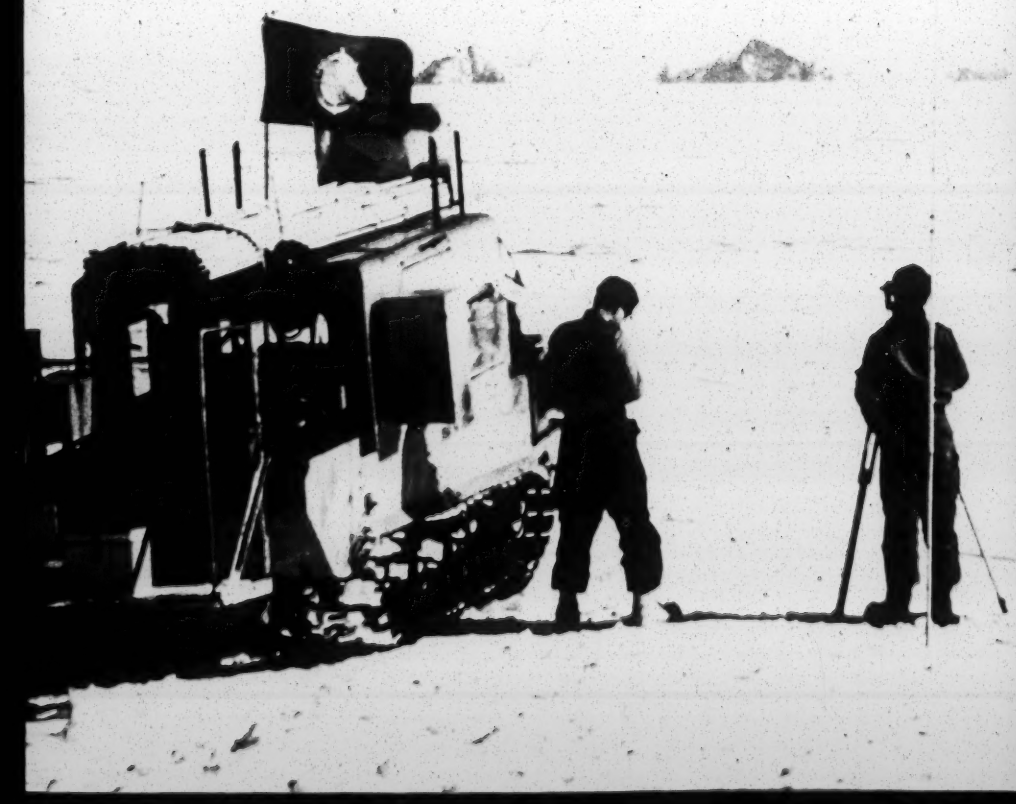
NATIONAL GEOGRAPHIC

School Bulletin

DECEMBER 4, 1961



TRACTOR TRAIN TO THE POLE

FIFTY YEARS ago two brave explorers set out for the South Pole, where no man had been before. Roald Amundsen, a Norwegian, succeeded. Robert Scott, an Englishman, reached the Pole but froze to death while trying to return to the coast.

In the half-century since, only five land expeditions have made it to the Pole. Early this year, Major Antero Havola, United States Army, led 10 men, who became the fourth group—and first Americans—to do it. Here he tells how they blazed a new trail to the Pole.

Story and Photographs by Major Antero Havola, USA

I OPENED the door and gazed back at the twin tracks creasing the snow.

The tracks were deeper now. Away from the coast, here on the central plateau, snow doesn't crust. It lies loose and ruts deeper.

This white ocean was peaceful. But the devil of the Antarctic—wind—could transform this still snow-scape within minutes into a biting blizzard.

We knew its fury. Five days after we left Byrd Station on our 800-mile trek to the South Pole, we ran into a 30-mile-an-hour storm that pinned us down for three days.

A storm in Antarctica is not like a snowstorm in the United States. Only a few inches of snow fall over the "white continent" in a year. But temperatures along our route average zero Fahrenheit; so little snow ever melts. High winds whip the crystals into stinging froth.

When the storm hit, we stopped our two sled trains. We always kept the engines of the two big tractors going so the lubricating oil would stay fluid. I stepped into the whistling wind once or twice to check the situation. In front of me I saw nothing but white, but above I could see blue sky.

As we waited in our heated wanigans (see Word of the Week) for the storm to quit, I thought of Robert Scott and his hardy band. To us a storm was only a delay,

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but to them it had meant death.

The storm gone, we moved off again. Because of our nearness to the Pole, the magnetic compass was useless; its needle jumped like a nervous penguin. Navigator George Fowler used surveyor's tools and a headful of geometry to keep us on course in the trackless waste.

The snow isn't trackless anymore. Every quarter-mile we planted a 12-foot bamboo pole as a trail marker for anyone who might follow us.

While we ground forward, our two scientists—Forrest Dowling and Henry Brecher— pried secrets from this untraveled part of Antarctica. They measured the thickness of the ice sheet and studied the terrain beneath. Every evening we dug a seven-foot snow pit for ice samples. We could learn about the continent's past weather from their temperature, density, and the thickness of layers laid down each year.

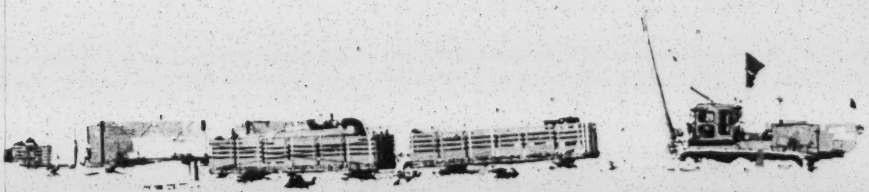
Other measurements, we knew, were being made miles away by another expedition led by Dr. Albert Crary of the National Science Foundation.

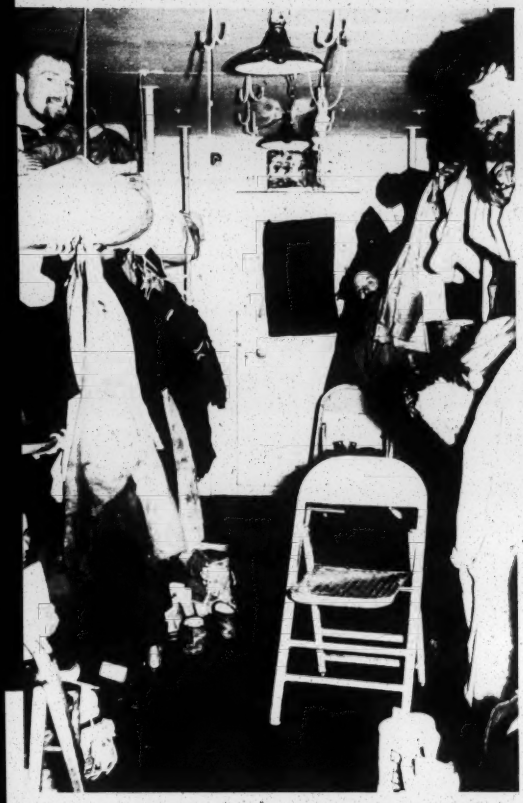
Plans called for Dr. Crary, his party of seven, and their three Sno-Cats to leave from the main base at McMurdo Sound and take a more round-about path to the Pole. We later learned they achieved their objective, reaching the Pole a month after we did.

One of the roaring tractors we were taking to the South Pole Station pulled two sleds full of diesel fuel and emergency equipment. We carried a full second set of clothing, and tents in case fire destroyed our wanigans.

MAJOR HAVOLA cuddles Antarctica's "southernmost cat" before leaving to begin his traverse from Byrd Station to the South Pole. He wears a Laplander's "Hat of the Four Winds," a reminder of Finland, land of his birth.

NEARING the Pole, one of two D-8 tractors pulls sleds loaded with diesel fuel





INSIDE the wanigan, the crew smiles from warm bunks. Except for Major Havola, two scientists, and Navigator Fowler, the crew was all-Navy. They were: Walter Davis, Edward Martens, Merideth Radford, Shirley Mahon, Willard Cunningham, Marvin Medlin, and James Douglas.

Life in the wanigans offered a startling contrast to Amundsen's day. Each had oil heat. An electric generator lit our lights, and its exhaust pipe melted snow for water. Bunks were stacked three high and were chosen by the rank of the occupant. It made a difference. The lower bunk of the three, like Mama Bear's porridge, was usually too cold; the top was too hot; but the middle was just right.

Fifty years ago Amundsen had this to say about his food: "We relied entirely upon pemmican (pressed meat and fat), biscuits, chocolate, powdered milk, and of course, dog meat.... In my opinion we had the best and most satisfying provisions possible."

The "best" has changed a lot. The main problem faced by our cook was to remember to bring the food in out of the cold in time to thaw. We had the best cuts of beef, canned vegetables and fruit, eggs, ice cream, baked goods, jam, butter, and cheese.

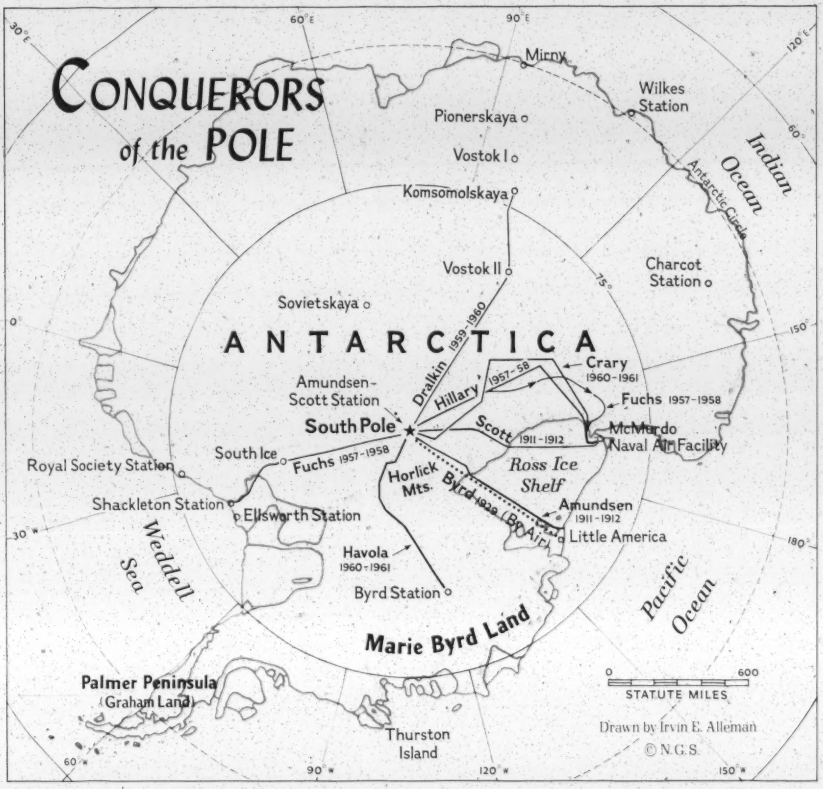
WORD OF THE WEEK

Wanigan (wan'-i-gun), n. *(from an American Indian word) A shelter for sleeping, eating, storage, or office space. It is mounted on wheels or runners and towed by a tractor.*

One day we halted the sled train before a big field of crevasses, those yawning pits in the ice that could swallow up our tractor—and ourselves. Amundsen would have inched his way forward, probing the ice with long sticks, hunting for safe bridges.

We could do better. A radio call brought a plane that scouted the crevasse field, mapped it for future reference, and dropped us a chart carefully marked with the safest route.

Once past this danger area, the rest was easy. On January 10, 1961, 33 days after leaving Byrd Station, we rolled up to Amundsen-Scott South Pole Station—the first Americans to make the over-ice trek to the bottom of the earth.



IN THE LONG history of exploration only seven traverses (overland expeditions) have reached the South Pole. Roald Amundsen was first. He had intended to try for the North Pole by drifting on ice floes, but while he was getting ready, word came that Admiral Robert Peary had beat him to it. Amundsen abruptly switched plans and decided to race Robert Scott to the South Pole.

Amundsen set out in October, 1911, and arrived at the South Pole on December 14, 1911. He ate his sled dogs when the food supply ran out. Scott used ponies, which could not keep up and had to be killed. On the way back Scott died (see Old Explorer column).

Forty-five years passed. In 1958 Sir Edmund Hillary, the New Zealander, crossed to the Pole and returned by air. Hillary was blazing a trail for the British explorer Dr. Vivian Fuchs, who with his party made the only complete traverse of the continent. His trip took 98 days, covered 2,158 miles of forbidding snow and ice. Two years later Russians under Dralkin reached the Pole.

U. S. Admiral Richard Byrd flew over the South Pole in 1929 but not until early this year did Major Antero Havola's party (see pages 109-112) become the first Americans to reach the Pole overland, followed by a second American expedition, led by Dr. Albert Crary.

UMI

SEABEES place steel arches over a deep snow ditch at new Byrd Station, Antarctica. The station will have a main tunnel and seven branch tunnels. Inside will stand a small city: a hospital, mess hall, kitchen, recreation area, garage, shops and laboratories, even a nuclear power plant.

The men hope to finish the station before the cruel southern winter stops work in March or April.

SNOW MILLER grinds through the snow, leaving a space that will be filled by a warm building.

NAVY MEN scrape loose snow from the walls of new Byrd Station's main tunnel. Finished base will hold 15 buildings, living space for 40 men.

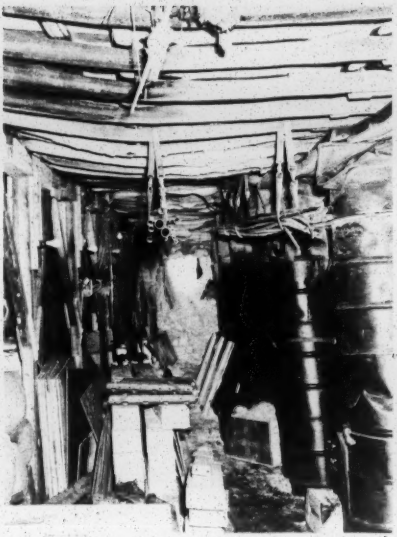
NEW BYRD STATION BUILT UNDER SNOW

DEEP in Antarctica's frozen white heart, Navy Seabees work fast to build a city under the snow.

They are rebuilding Byrd Station, an important United States base 500 miles inland, in an area named Marie Byrd Land after Admiral Richard E. Byrd's wife.

The old Byrd Station, above the snow six miles away, has nearly collapsed. The beams of its five-year-old buildings creak and groan as accumulated snow and ice push them down.

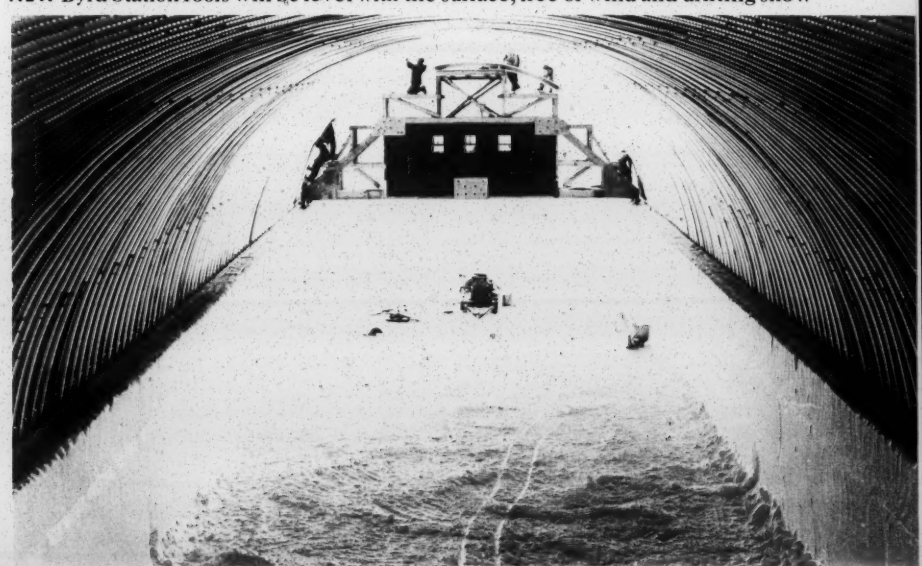
So the Navy is planting its new station out of the weather. Big ditches stripe the area. Seabees cover them with steel arches. Inside, the buildings of the new Byrd Station rise.



OLD Byrd Station sags into the snow. Roof beams are cracked but scientists work here while the new station is being built. Many of the world's weather currents are born over Antarctica. At Byrd Station and others, weather is studied at first hand.

Photographs By U. S. Navy

NEW Byrd Station roofs will be level with the surface, free of wind and drifting snow



UMI

Photographs U. S. Navy

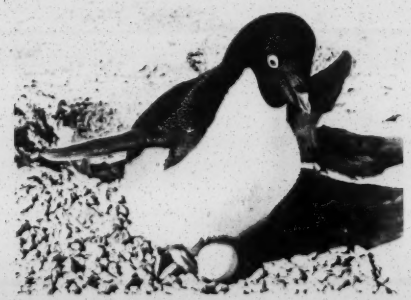
First Citizens of Antarctica

THE GENTLEMAN most at home in Antarctica's frozen wastes is a formal sort of fellow who goes around in a "dress suit" all the time. He is the penguin, as funny a bird as you will ever see. His legs and flipper-like wings are so short that he can neither run nor fly. He just waddles along on the ice. A playful bird, he likes to hop aboard an ice floe and go for a ride.

The penguin may be a clown on land, but in the water he swims and dives like a champion, using his wings for paddles, and making as much as 45 miles an hour. He feeds on fish, squid, and crabs.

On land penguins flock together, thousands of them gathering in a single nesting place. The female penguin lays the egg on the ground, then holds it in a pouch close to the tops of her feet and passes it back and forth with the male for 52 days to keep it from freezing.

The largest penguins, Emperors, grow 3½ feet tall and weigh as much as 90 pounds. The eye-ringed ones shown here are Adélie penguins, photographed at Hallett Station in Antarctica. They are much smaller than the Emperors, growing to 30 inches tall and weighing between 12 and 14 pounds. W.G.



HARD NEST: Cold pebbles offer little warmth for this penguin's egg, but they are better than ice and snow.

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UMI

THE WORK of scientists and explorers in the frozen continent of Antarctica always stirs the imagination. We especially admire the brave men who first fought their way through its snows and storms to reach the South Pole.

They had no tractor trains to pull them in a cocoon of warmth across the snow. They had no airplanes overhead to find the best route or to drop supplies and mail from home.

I am thinking especially of Robert Falcon Scott, who led a party to the Pole 50 years ago.

Scott's story is one of frustration and death, yet he left a legend of strength and devotion to duty that will live as long as men admire those qualities.

His group got to the Pole on sheer guts. They walked, pulling their sleds behind them. These were hardened men who knew the Antarctic well. Scott, for example, wrote just before starting from his base that he had just come back from a "remarkably pleasant and instructive little spring journey" to the west. That hike, in reality, covered 175 miles in 13 days, with temperatures between 15 and 40 degrees below zero, with two blizzards thrown in.

So they knew what they were getting into. After a cruel 800-mile trek, Scott did reach the Pole—and bitter disappointment. They were not the first. His English party found there the flag left by a Norwegian group under Amundsen, who had beaten them by a month.

On the return trip, slowed by injury and sickness, they ran into vile weather.

While freezing to death in his last camp, Scott wrote to his wife:

"We got within 11 miles of our depot. . . . We should have got through but have been held for four days by a frightful storm. I think the last chance is gone. We have decided not to kill ourselves, but to fight to the last for that depot . . ."

Some of Scott's last scribbled words were for his son. He warned him against laziness, a vice he himself had always fought. "I had to force myself into being strenuous, as you know—had always an inclination to be idle. . . . How much better [this journey] has been than lounging in too great comfort at home . . ."

New Statue Honors Admiral Byrd

Byrd Antarctic Expedition

In 1934 Admiral Byrd wintered alone in this hut 108 miles from his Little America base.

The first memorial to stand on Arlington Cemetery's "Avenue of Heroes" honors the late Rear Admiral Richard E. Byrd, the great polar explorer.

The statue was erected by the National Geographic Society, which supported Admiral Byrd's expeditions and published accounts of his adventures.

The bronze statue shows Admiral Byrd in arctic dress at the height of his career when the world hailed him as the foremost polar flyer.

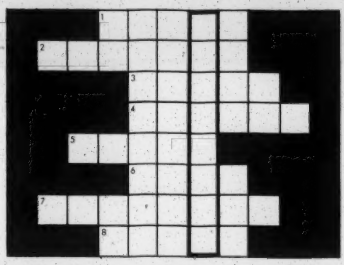
Admiral Byrd made five trips to the Antarctic. He was the first man to fly over both the North and South Poles.

Byrd trained many explorers, including Dr. Paul A. Siple, who joined Byrd as a Boy Scout, later led the first group to winter at the South Pole.

Dr. Melville Bell Grosvenor, president of the National Geographic Society, said at the dedication of the statue: "No man contributed more to our knowledge of the Arctic and Antarctic. . . . He will live in history as the Admiral of the Ends of the Earth."

GEO-GRAPH

Solve the key word (heavy outline) and learn the explorer's term for an overland trip. All explorers' names are used in this issue.



ACROSS

1. English explorer who lost his life on way back from the South Pole (1912)
2. New Zealand Antarctic explorer, also conqueror of Mount Everest
3. Leader of second American overland expedition to South Pole
4. Leader of first United States party to reach the South Pole overland
5. Scientific leader of first party to winter at the South Pole
6. "Admiral of the Ends of the Earth"
7. Norwegian explorer, first to reach the South Pole overland
8. Present commander of the U. S. Navy's Operation Deep Freeze

Last week's puzzle

Antarctica Closed to Military Use

While nuclear war threatens the rest of the world, the olive branch of peace waves over Antarctica.

In December, 1959, 12 nations—the United States, Russia, Argentina, Australia, Belgium, Chile, France, United Kingdom, Japan, New Zealand, Norway, and the Union of South Africa—signed a treaty setting aside the continent for peaceful purposes.

No military training, equipment, testing, atomic explosions, or atomic wastes are allowed on the icy continent.

Each nation will tell the others of its expeditions and bases. Scientific data will be shared. Any base is to be open to inspection by anyone at any time.

Many people hope the Antarctica treaty will set a precedent for the peaceful use of space.

Tourists Visit White Continent

Antarctica, for all its cold and snow, may some day be a tourist attraction.

Its spectacular scenery, comical penguins, and active volcano, some travel experts believe, will lure the traveler who has already seen the more familiar tourist areas.

Rear Admiral David M. Tyree, commander of the United States Operation Deep Freeze, declares tourists would enjoy the Antarctic, since its scenery is "dramatic beyond belief."

He points out that during the height of the southern summer—January and February—ice breakers are not needed to sail the Antarctic waters. A cruise ship could navigate easily, he said.

Already, some tourists have briefly visited the frozen continent. The Argentine government sent a cruise ship to Palmer Peninsula, Antarctica's "tropics." During the ten-day cruise, the passengers traveled in constant daylight. They were given special clothing to protect them from the bitter cold as they photographed penguins and took sled rides.

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UMI

Polar Explorers Call Home Through Ham Radio Operators

TODAY'S Antarctic explorer has a quick link with home and family.

While the families of Scott and Amundsen had to wait a year or more to hear from them, amateur radio operators now can put through a call from the Northern Hemisphere to the South Pole in seconds.

They connect telephones to their radio sets to allow stay-at-home relatives to talk to explorers.

These amateurs, called hams, are enjoying a growing hobby. Ham sets are in operation all over the world, in homes, barns, automobiles, and some school rooms.

Ham operators take an important part in emergency work, and by prompt action have saved many lives.

At least one ham uses his hobby to help teach geography. Marvin M. Rothberg, a teacher in Lido Elementary School, Long Beach, Long Island, New York, maintains a transmitter right in his classroom. It has been so successful that Mr. Rothberg now tours the other three elementary schools in town with a portable rig.

David S. Boyer

Hello America! Navy men isolated in an Antarctic base talk to home over ham radio.

"The radio conversations give children a better sense of the world and the people in it," Mr. Rothberg told the *Bulletin*. "Real contact with real people in far-off places arouses tremendous interest in geography."

Among the hundreds of persons all over the world who have talked with Mr. Rothberg's social science classes on the radio are missionaries in the Belgian Congo, a voodoo expert in Haiti, and a trapper in Canada's Northwest Territories.

When the pupils were studying wheat, they reached a woman wheat grower in Kansas who described her farm operation and later mailed the school samples of her crop.

A California man told the students how he uses airplane motors and propellors to stir the air around his avocado groves.

Ships at sea have their hams, too, and the Lido students have talked with a tuna ship bound for Africa and a storm-tossed freighter in the North Atlantic.

One sixth-grader spoke regularly with his father, an engineer on a ship in the Caribbean Sea, some 1,700 miles from Long Beach.

In addition to creating interest in geography and social studies, the ham operation has enriched science classes. Several students have gone on to become hams in their own right. Some are considering electronics as a career.

NATIONAL GEOGRAPHIC
School Bulletin
... from the School Service Division

Published each week during the school year by the National Geographic Society. Melville Bell Grosvenor, President.

December 4, 1961 **Vol. 40, No. 10**

ANTARCTIC ISSUE —

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- Antarctic Epics
- New Byrd Station
- Penguins

... also Ham Radio, Index Nos. 1-10

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NEXT WEEK—

Cradle of Italian Independence